Virginia Energy Plan Highlights
September 12, 2007

The General Assembly set out broad state energy policy statements and objectives, and called for development of a 10-year energy plan. The resulting Virginia Energy Plan sets out four broad goals that will help Virginians use energy more wisely by expanding conservation and efficiency practices, providing needed energy resources to support our economy, and beginning to address the challenges we face from greenhouse gas emissions. The four goals include:

- Increase energy independence, with an emphasis on conservation and clean fuel technologies, by:
    - Reducing the rate of growth of energy use by 40 percent. This will reverse the projected growth in per capita energy use and result in a nearly level per capita energy use per year.
    - Increasing Virginia's indigenous energy production by 20 percent.
- Expand consumer energy education to overcome barriers to implementing energy-efficiency and conservation actions.
- Reduce greenhouse gas emissions by 30 percent by 2025, bringing emissions back to 2000 levels.
- Capitalize on economic development opportunities through business expansion and increased research and development in areas of strength, including alternate transportation fuels, nuclear technology, coastal energy production, and carbon capture and storage.

The Plan assesses where energy used in Virginia comes from and where it is used.

- Virginia is a net importer of energy. The state produces coal, using about half in state for electric generation and exporting the other half for steel production and electric generation. Virginia produces natural gas equal amount to about 35 percent of total in-state use, and a small amount of renewable energy, principally from biomass and hydro power. All other sources of energy are imported from other states or countries.
- The transportation sector accounts for 43 percent of the amount of energy consumed in Virginia measured at its end use. The residential sector is responsible for 17%, commercial sector for 15%, and the industrial sector for 25%.

Energy efficiency and conservation provide the least costly and most readily deployable energy resource options available to Virginia. The Plan calls for state, local and federal policy actions such as expanding the Energy Star sales tax holiday, addressing the need for stronger building energy codes, and increasing federal CAFE and appliance standards. The Plan notes that all individuals and businesses have a role in reducing energy use. Many small, easy steps will together have a substantial effect on reducing energy use in Virginia.

- Legislation enacted in 2007 set a conservation and efficiency goal to reduce electric use 10 percent (of 2006 consumption) by 2022.
    - Reaching the 10 percent goal would defer or postpone the need for four to five generation stations. Virginia consumers would save in the range of $200 to $700

million (net savings after costs) through 2022 (average $15 to $50 million per year) savings.
    - The Commonwealth's electric utilities will need to invest in the range of $100 to $120 million per year to support energy conservation programs. This would include costs of incentives, consumer education, and administration of energy-efficiency and conservation programs. Utility customers will have to match this investment with $180 to $200 million per year to cover their share of up-front energy-efficiency costs.
- Through aggressive programming and with a concerted investment in efficiency and conservation, Virginia could realize natural gas savings of approximately 7.5 percent over the next ten years. This would lower Virginian's natural gas costs by an average of approximately $125 million annually (net savings after program expenses based on 2007 natural gas costs).
- A national estimate of fuel oil conservation opportunities found that use could be reduced 13 percent by 2015 through an aggressive program.
- Transportation measures should be targeted at reducing vehicle miles traveled, increasing transportation efficiency, and increasing use of alternate transportation fuels. Reducing transportation fuel use by 5 percent through these measures would save 260 million gallons of gasoline per year, equivalent to the energy used by 300,000 cars in Virginia each year.

Virginia is home to significant electric generation and transmission, natural gas and petroleum pipeline and storage, petroleum refining, rail and road, and marine import infrastructure. Virginia will need to add energy infrastructure over the next ten years to continue to provide reliable, lower-cost energy to its consumers and decrease the potential risk that consumers face from disruptions in energy supplies.

- Virginia's electric utilities will need to build new electric generation and transmission infrastructure to serve growing electric loads, particularly in the Northern Virginia and Hampton Roads areas.
- Virginia natural gas utilities will need to build additional pipeline and fuel supply capacity such as the third pipeline crossing in Hampton Roads. Offshore natural gas should only be advanced consistent with Virginia policy calling for exploration only no closer than 50 miles from the coastline.
- Petroleum supply infrastructure will need to be enhanced to provide alternative supplies such as ethanol and biodiesel fuels to Virginia consumers. The state's refinery in Yorktown should be expanded.
- Virginia's energy suppliers must ensure that the state's energy infrastructure is secure from natural and human-made disasters.

Energy use and production can affect Virginia's land, air, and water quality as well as wildlife and wildlife habitat. Energy production and consumption are significant factors in Virginia's air quality challenges. Fuel consumption accounts for the overwhelming majority of Virginia's sulfur dioxide, nitrogen oxides, mercury, and carbon emissions to the atmosphere. To meet the target of bringing carbon emissions back to 2000 levels by 2025, the Plan recommends the following:

- Create a Commission on Climate Change to make a more comprehensive assessment of greenhouse gas issues and develop a plan for how to reach a greenhouse gas emission reduction goal.
- Require reporting of greenhouse gas emissions using The Climate Registry protocol.

Virginia's colleges and universities, federal laboratories, and businesses undertake a broad range of world-class energy research and development (R&D). These have the potential to lead to substantial new business activity in Virginia.

- Virginia should increase investment in energy R&D by $10 million per year, with half from state resources and half from private and federal resources, targeted in four strategic areas of strength.
- Virginia should establish public-private governance of energy R&D, named the Virginia Energy Research and Development Organization (VERDO), to set priorities for public energy R&D funding.
- Virginia should host energy research showcases to connect technologies developed by Virginia's energy R&D organizations with venture capital firms and businesses with the resources to bring the ideas to market.

Virginia should support businesses wishing to make substantial new investments in energy activities in the four energy areas where Virginia has strategic advantages.

- Virginia should target its business development actions to those energy businesses that produce real employment and capital investment gains, with a focus on the four strategic areas of strength.
- Virginia should support development of two to three energy technology business parks.
- Virginia should provide workforce services that support development of adequate numbers of trained workers for energy businesses.

Taken together, these recommendations will result in a substantial investment in new energy activities in Virginia. By heeding these calls to action, government, individual citizens, and businesses will use energy more wisely, have increased security from energy-driven disruptions, help ensure the availability of needed energy supplies to support the state's economy, and reduce the future impacts of climate change.